

IN THE CLAIMS:

1. (Currently Amended) A metal halide lamp comprising an arc tube that includes:
a pair of electrode structures, each of which has an electrode at a tip;
a main tube part made of polycrystalline alumina ceramic having magnesium oxide of 200 ppm or below, and containing a discharge space in which the electrodes of the
5 electrode structures are located to oppose each other; and

a pair of thin tube parts that connect from the main tube part and are sealed by respective sealing members with the electrode structures inserted therein, wherein

$20 \leq WL \leq 50$, $EL/Di \geq 2.0$, and $0.5 \leq G \leq 5.0$ $0.5 \leq G \leq 1.5$ are satisfied, where tube wall loading of the arc tube is $WL(W/cm^2)$, a distance between the electrodes is $EL(mm)$, an inner
10 diameter of the main tube part is $Di(mm)$, and a crystal grain diameter of the polycrystalline alumina ceramic is $G(\mu m)$.

2. (Cancelled)

3. (Original) The metal halide lamp of Claim 1, wherein
the inner diameter $Di(mm)$ of the main tube part satisfies $2.0 \leq Di \leq 10.0$.

4. (Cancelled)

5. (Original) The metal halide lamp of Claim 1, wherein
the polycrystalline alumina ceramic has transmittance of 94% or more.

6. (Currently Amended) A metal halide lamp comprising an arc tube that includes:
a pair of electrode structures, each of which has an electrode at a tip;

a main tube part made of polycrystalline alumina ceramic having magnesium oxide in a range of 1 ppm to 200 ppm wherein a uniform grain dimension is provided, and
5 containing a discharge space in which the electrodes of the electrode structures are located to oppose each other; and

a pair of thin tube parts that connect from the main tube part and are sealed by respective sealing members with the electrode structures inserted therein, wherein

10 $20 \leq WL \leq 50$, $EL/Di \geq 2.0$, and $0.5 \leq G \leq 5.0$ $0.5 \leq G \leq 1.5$ are satisfied, where tube wall loading of the arc tube is $WL(W/cm^2)$, a distance between the electrodes is $EL(mm)$, an inner diameter of the main tube part is $Di(mm)$, and a crystal grain diameter of the polycrystalline alumina ceramic is $G(\mu m)$.

7. (Cancelled)

8. (Previously Presented) The metal halide lamp of Claim 6, wherein the inner diameter $Di(mm)$ of the main tube part satisfies $2.0 \leq Di \leq 10.0$.

9. (Previously Presented) The metal halide lamp of Claim 1, wherein the polycrystalline alumina ceramic has transmittance of 94% or more.